



## **WATER RESOURCES RESEARCH GRANT PROPOSAL**

**Project ID:** 2005NY69B

**Title:** Protecting future quantity and quality of New York State's water resources under changing climatic conditions

**Project Type:** Research

**Focus Categories:** Climatological Processes, Nutrients, Water Quantity

**Keywords:** Phosphorus, nitrogen, agriculture, climate extremes

**Start Date:** 03/01/2005

**End Date:** 02/28/2006

**Federal Funds:** \$22,500

**Non-Federal Matching Funds:** \$29,055

**Congressional District:** 22

**Principal Investigators:**

Tammo Steenhuis

Arthur T. DeGaetano

Michael Todd Walter

### **Abstract**

Control of phosphorus and nitrogen (P and N) loss from agricultural landscapes is important because P is widely recognized as a primary cause of eutrophication of inland waters and N has a direct effect on the degradation of coastal waters. Moreover, although the northeastern US receives sufficient rainfall in most years in drought years many regional municipalities face a severe shortfall in drinking water. Protecting our water resources in the future will require comprehensive understanding and knowledge about how foreseeable climate extremes will affect both water quality and quantity. Since essentially all the current water quality models were developed for Midwestern US conditions, these models need to be adapted to the hydrologic and climatic conditions of the Northeast to be trustworthy in New York State. This research is especially important for New York City since eight million people depend on water collected in the Catskills. Moreover, the in the Catskills region of New York State, excessive P loading to the Cannonsville Reservoir, which supplies drinking water to New York City, has led to

wastewater discharge restrictions that limit economic development in local communities. This scenario is indicative of many of the region's municipalities.